GEORGIA INSTITUTE OF TECHNOLOGY
OFFICE OF CONTRACT ADMINISTRATION
SPONSORED PROJECT INITIATION

Date: June 15, 1976

Project Title: New Methods for Biomedical Research

Project No: G-33-D01

Project Director: Dr. Nai-Teng Yu

Sponsor: DHEW/PHS/NIH - National Eye Institute, Bethesda, Maryland

Agreement Period: From 7/1/76 Until 6/30/77*

Type Agreement: Grant No. 1K04 EY00073-01

Amount:

$22,400	PHS Funds
2,038	GIT Contrib. (G-33-383)
$24,438	TOTAL

Reports Required:
Interim Progress Report
Terminal Progress Report

Sponsor Contact Person (s):

Technical Matters

Dr. Luigi Giacometti
Extramural Program Director
Cataract Program
National Eye Institute
DHEW, PHS, NIH
Bethesda, Maryland 20014

Contractual Matters
(thru OCA)

Frances M. Goff
Contracts & Grants Branch
National Eye Institute
Bethesda, Maryland 20014

* 01 year; overall grant period 7/1/76 - 6/30/81

Defense Priority Rating: None

Assigned to: Chemistry (School/Laboratory)

COPIES TO:

- Project Director
- Division Chief (EES)
- School/Laboratory Director
- Dean/Director--EES
- Accounting Office
- Procurement Office
- Security Coordinator (OCA)
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- Office of Computing Services
- Director, Physical Plant
- EES Information Office
- Project File (OCA)
- Project Code (GTRI)
- Other

CA-3 (3/76)

GEORGIA INSTITUTE OF TECHNOLOGY
OFFICE OF CONTRACT ADMINISTRATION

SPONSORED PROJECT TERMINATION

Date: 8/17/77

Project Title: *New Methods for Biomedical Research*

Project No: *G-33-D01*

Project Director: *Dr. Nai-Teng Yu*

Sponsor: *DHEW/PHS/NIH - National Eye Institute, Bethesda, MD*

Effective Termination Date: *6/30/77 (01 year)*

Clearance of Accounting Charges: *by 6/30/77*

Grant/Contract Closeout Actions Remaining:

_ Final Invoice and Closing Documents
_ Final Fiscal Report
_ Final Report of Inventions
_ Govt. Property Inventory & Related Certificate
_ Classified Material Certificate
X Other *Annual Report of Expenditures (01 Year) due no later than 9/30/77.*

NOTE: FOLLOW-ON PROJECT IS G-33-D02 (02 year).

Assigned to: *Chemistry* (School/Laboratory)

COPIES TO:

Project Director
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Other

CA—4 (3/76)

FORM APPROVED
BUDGET BUREAU NO. 68R-738

PROGRESS REPORT	GRANT NUMBER: 1 K04 EY00073-01
NAME OF HEAD OF DEPARTMENT OR DEPARTMENTAL SUBDIVISION: J. A. Bertrand	ACCOMPLISHMENTS COVERING PERIOD — FROM: July 1, 1976 — THROUGH: June 30, 1977
NAME OF AWARDEE: Nai-Teng Yu	
INSTITUTION: Georgia Institute of Technology	
TITLE OF RESEARCH PROPOSAL (REPEAT TITLE SHOWN ON PAGE 1): New Methods for Biomedical Research	

STATEMENT OF ACCOMPLISHMENT (IF SPACE IS INADEQUATE, USE CONTINUATION PAGE)

The awardee spent part (June to August) of the first year of the award period organizing his research program at Georgia Tech and the remainder of the year (from August, 1976) at the University of California, Berkeley, working in the laboratory of Professor J. C. Wang. Work at the University of California included the following biochemical and biophysical techniques: (1) isolation of DNA (from E. coli, virus and lens epithelium), (2) nitrocellulose membrane filter methods (especially useful for studying the DNA-protein interactions), (3) electron microscopy (useful for examining the nature of DNA-protein binding pattern and the structure of lens epithelium), (4) analytical ultracentrifuge (for characterization of chemically modified DNA, DNA-psoralen complexes, (5) 5-BrdU and 4-Thiothymine labelling of DNA in vivo and in vitro, (6) cross-linking of DNA and protein by UV irradiation. The research experience in Professor J. C. Wang's laboratory will be very helpful for the awardee's research on the fundamental biological processes (DNA replication, repair, transcription, and protein synthesis) in lens epithelium. The mutation of DNA and its failure in repair synthesis may be related to the formation of human senile cortical cataract.

Dr. Yu continued to supervise the research of two Postdoctoral Associates at Georgia Tech and to collaborate on research with Professor Felton (Georgia Tech) and Professor Kuck (Emory University School of Medicine).

Service in an advisory capacity:

(1) Consultant, Review Branch, Division of Extramural Affairs, National Heart, Lung, and Blood Institute, NIH.
(2) Consultant, Special Study on Biomedical Aspects of Microwave Radiation, Division of Research Grants, NIH.

Outside lecture:

"Recent Developments in Biological Resonance Raman Spectroscopy," Lawrence Berkeley Laboratory, December, 1976.

Publications:

(1) Nai-Teng Yu, E. J. East, R. C. C. Chang and J. F. R. Kuck, Jr., "Raman Spectra of Bird and Reptile Lens Proteins," Exp. Eye Res. 24, 000-000 (1977).

(2) Nai-Teng Yu, "Raman Spectroscopy: A Conformational Probe in Biochemistry," CRC Critical Review in Biochem., 1977 (in press).

(3) J. A. Shelnutt, L. D. Cheung, R. C. C. Chang, Nai-Teng Yu and R. H. Felton, "Resonance Raman Spectra of Metalloporphyrins. Effects of Jahn-Teller Instability and Nuclear Distortion on Excitation Profiles of Stokes Fundamentals," J. Chem. Phys. (1977) (in press).

(4) J. A. Shelnutt, N. T. Yu, R. C. C. Chang, L. D. Cheung, and R. H. Felton, "Effects of Jahn-Teller Instability and Excited State Nuclear Distortion on Resonance Raman Excitation Profiles of